



SEQUENCE LISTING

<110> ZHOU, Rouli
SHAO, Genze
LIU, Xinrong
ZHANG, Qingyun
RUI, Jingan
ZHANG, Ye
JIN, Yueying
LIN, Ming
ZHANG, Sha

<120> Human Cancer-Relating Genes, the Products Encoded Thereby and Application Thereof

<130> 062331-2002

<140> US 10/540,539
<141> 2006-10-04

<150> PCT/CN2003/001109
<151> 2003-12-24

<150> CN 03109786.3
<151> 2003-04-21

<150> CN 02158110.X
<151> 2002-12-24

<160> 15

<170> PatentIn version 3.4

<210> 1
<211> 954
<212> DNA
<213> Homo sapiens

<400> 1
atgacgtcac ggactcgggt cacatggcgg agtcgcggc gcccctccc cgtccccgcc 60
gctgcagccg tcgccttcgg agcgaagggt accgaccggg cagaagctcg gagctctcgg 120
ggtatcgagg aggcaggccc gcggggcgac gggcgagcgg gccgggagcc ggagcggcgg 180
aggagccggc agcagcggcg cggcgggctc caggcgaggc ggtcgacgct cctgaaaact 240
tgcgcgcgcg ctgcgcccac tgcgcccgga gcgatgaaga tggtcgcgcc ctggacgcgg 300
ttctactcca acagctgctg cttgtgctgc catgtccgca ccggcaccat cctgctcggc 360
gtctgggtatc tgatcatcaa tgctgtggta ctgttgattt tattgagtgc cctggctgat 420
ccggatcagt ataacttttc aagttctgaa ctgggaggtg actttgagtt catggatgat 480
gccaacatgt gcattgccat tgcgatttct cttctcatga tcctgatatg tgctatggct 540

acttacggag	cgtacaagca	acgcgcagcc	tggatcatcc	cattcttctg	ttaccagatc	600
tttgactttg	ccctgaacat	gttggttgca	atcactgtgc	ttatttatcc	aaactccatt	660
caggaataca	tacggcaact	gcctccta	tttccctaca	gagatgatgt	catgtcagtg	720
aatcctacct	gtttggctct	tattattctt	ctgtttatta	gcattatctt	gacttttaag	780
ggttacttga	ttagctgtgt	ttggaactgc	taccgataca	tcaatggtag	gaactcctct	840
gatgtcctgg	tttatgttac	cagcaatgac	actacgggtgc	tgctaccccc	gtatgatgat	900
gccactgtga	atgggtgctgc	caaggagcca	ccgccacctt	acgtgtctgc	ctaa	954

<210> 2
 <211> 1440
 <212> DNA
 <213> Homo sapiens

<400> 2	
gccgactagg	ggactggcgg aggggtgcacg ctgatggatt tactcaccgg gtgcttggag 60
ctccagcagc	tggctggagc ccgcgatgac gtcacggact cgggtcacat ggccgagtcc 120
gccccgcccc	ctccccgtcc ccgcgcgtgc agccgtcgcc ttccggagcga agggtagcga 180
cccggcagaa	gctcggagct ctcggggtat cgaggaggca ggcccgcggg cgcacgggcg 240
agcgggcccg	gagccggagc ggccggaggag ccggcagcag cggcgcggcg ggctccaggc 300
gaggcggctg	acgctcctga aaacttgccg gcgcgcctgc gccactgcgc ccggagcgat 360
gaagatggtc	gcgccttga cgcggttcta ctccaacagc tgctgcttgt gctgccatgt 420
ccgcaccggc	accatcctgc tcggcgtctg gtatctgatc atcaatgctg tgggtactgtt 480
gattttattg	agtgccctgg ctgatccgga tcagtataac ttttcaagtt ctgaactggg 540
aggtgacttt	gagttcatgg atgatccaa catgtgcatt gccattgcga tttctcttct 600
catgatcctg	atatgtgcta tggctactta cggagcgtac aagcaacgcg cagcctggat 660
catcccattc	ttctgttacc agatctttga ctttgccctg aacatggttg ttgcaatcac 720
tgtgcttatt	tatccaaact ccattcagga atacatacgg caactgcctc ctaattttcc 780
ctacagagat	gatgtcatgt cagtgaatcc tacctgtttg gtccttatta ttcttctgtt 840
tattagcatt	atcttgactt ttaagggtta cttgattagc tgtgtttgga actgctaccg 900
atacatcaat	ggtaggaact cctctgatgt cctggtttat gttaccagca atgacactac 960
gggtgctgcta	ccccgatatg atgatgccac tgtgaatggg gctgccaaagg agccaccgcc 1020
accttacgtg	tctgcctaag ccttcaagtg ggccggagctg agggcagcag cttgactttg 1080

cagacatctg	agcaatagtt	ctgttatttc	acttttgcca	tgagcctctc	tgagcttggt	1140
tgttgctgaa	atgctacttt	ttaaaattta	gatgttagat	tgaaaactgt	agttttcaac	1200
atatgctttg	ctggaacact	gtgatagatt	aactgtagaa	ttcttcctgt	acgattgggg	1260
atataatggg	cttcactaac	cttcocctagg	cattgaaact	tccccaaat	ctgatggacc	1320
tagaagtctg	cttttgtacc	tgctgggccc	caaagttggg	catttttctc	tctgttcctt	1380
ctcttttgaa	aatgtaaaat	aaaacccaaa	atagaccaa	aaaaaaaaa	aaaaaaaaa	1440

<210> 3

<211> 2169

<212> DNA

<213> Homo sapiens

<400> 3

gccgactagg	ggactggcgg	aggggtgcacg	ctgatggatt	tactcaccgg	gtgcttgag	60
ctccagcagc	tggtcggagc	ccgcgatgac	gtcacggact	cgggtcacat	ggccgagtc	120
gccccgcccc	ctccccgtcc	ccgccgctgc	agccgtcgcc	ttcggagcga	agggtagcga	180
cccggcagaa	gctcggagct	ctcgggggat	cgaggaggca	ggcccgcggg	cgcacgggcg	240
agcgggccc	gagccggagc	ggcggaggag	ccggcagcag	cggcgcgggc	ggctccaggc	300
gaggcggctg	acgtcctga	aaacttgccg	gcgcgctcgc	gccactgcgc	ccggagcgat	360
gaagatggtc	gcgccttga	cgcggttcta	ctccaacagc	tgctgcttgt	gctgccatgt	420
ccgcaccggc	accatcctgc	tcggcgtctg	gtatctgac	atcaatgctg	tggtactgtt	480
gattttattg	agtgccctgg	ctgatccgga	tcagtataac	ttttcaagtt	ctgaactggg	540
aggtgacttt	gagttcatgg	atgatgcaa	catgtgcatt	gccattgcga	tttctcttct	600
catgatcctg	atatgtgcta	tggtacttta	cggagcgctac	aagcaacgcg	cagcctggat	660
catcccatc	ttctgttacc	agatctttga	ctttgccctg	aacatgttgg	ttgcaatcac	720
tgtgcttatt	tatccaaact	ccattcagga	atacatcagg	caactgcctc	ctaattttcc	780
ctacagagat	gatgtcatgt	cagtgaatcc	tacctgtttg	gtccttatta	ttcttctgtt	840
tattagcatt	atcttgactt	ttaagggtta	cttgattagc	tgtgtttgga	actgctaccg	900
atacatcaat	ggtaggaact	cctctgatgt	cctggtttat	gttaccagca	atgacactac	960
ggtgctgcta	ccccgcatg	atgatgccac	tgtgaatggg	gctgccaaag	agccaccgcc	1020
accttacgtg	tctgcctaag	ccttcaagtg	ggcggagctg	agggcagcag	cttgactttg	1080
cagacatctg	agcaatagtt	ctgttatttc	acttttgcca	tgagcctctc	tgagcttggt	1140

```

tgttgctgaa atgctacttt ttaaaattta gatgttagat tgaaaactgt agttttcaac 1200
atatgctttg ctggaacact gtgatagatt aactgtagaa ttcttcctgt acgattgggg 1260
atataatggg cttcactaac cttccctagg cattgaaact tccccaaat ctgatggacc 1320
tagaagtctg cttttgtacc tgctgggccc caaagttggg catttttctc tctgttcctt 1380
ctcttttgaa aatgtaaaat aaaacaaaa atagacaact ttttcttcag ccattccagc 1440
atagagaaca aaaccttatg gaaacaggaa tgtcaattgt gtaatcattg ttctaattag 1500
gtaaatagaa gtccttatgt atgtgttaca agaatttccc ccacaacatc ctttatgact 1560
gaagttcaat gacagtttgt gtttggtggt aaaggatttt ctccatggcc tgaattaaga 1620
ccattagaaa gcaccaggcc gtgggagcag tgaccatctg ctgactgttc ttgtggatct 1680
tgtgtccagg gacatggggg gacatgcctc gtatgtgtta gagggtgga tggatgtgtt 1740
tggcgctgca tgggatctgg tgcccctctt ctctggatt cacatccca cccagggcc 1800
gcttttacta agtgttctgc cctagattgg ttcaaggagg tcatccaact gactttatcg 1860
agtggaattg ggatatattt gatatacttc tgcctaacaa catggaaaag ggttttcttt 1920
tccctgcaag ctacatccta ctgctttgaa cttccaagta tgtctagtca ccttttaaaa 1980
tgtaaacatt ttcagaaaaa tgaggattgc cttccttgta tgcgcttttt accttgacta 2040
cctgaattgc aagggatttt tatatattca tatgttaca agtcagcaac tctcctgttg 2100
gttcattatt gaatgtgctg taaattaagt tgtttgcaat taaaacaagg tttgccaca 2160
aaaaaaaaa 2169

```

```

<210> 4
<211> 317
<212> PRT
<213> Homo sapiens

```

```

<400> 4

```

```

Met Thr Ser Arg Thr Arg Val Thr Trp Pro Ser Pro Pro Arg Pro Leu
1          5          10          15

```

```

Pro Val Pro Ala Ala Ala Val Ala Phe Gly Ala Lys Gly Thr Asp
          20          25          30

```

```

Pro Ala Glu Ala Arg Ser Ser Arg Gly Ile Glu Glu Ala Gly Pro Arg
          35          40          45

```

```

Ala His Gly Arg Ala Gly Arg Glu Pro Glu Arg Arg Arg Ser Arg Gln

```

50		55		60
Gln Arg Arg Gly Gly Leu Gln Ala Arg Arg Ser Thr Leu Leu Lys Thr				
65		70		75 80
Cys Ala Arg Ala Arg Ala Thr Ala Pro Gly Ala Met Lys Met Val Ala				
	85		90	95
Pro Trp Thr Arg Phe Tyr Ser Asn Ser Cys Cys Leu Cys Cys His Val				
	100		105	110
Arg Thr Gly Thr Ile Leu Leu Gly Val Trp Tyr Leu Ile Ile Asn Ala				
	115		120	125
Val Val Leu Leu Ile Leu Leu Ser Ala Leu Ala Asp Pro Asp Gln Tyr				
	130		135	140
Asn Phe Ser Ser Ser Glu Leu Gly Gly Asp Phe Glu Phe Met Asp Asp				
145		150		155 160
Ala Asn Met Cys Ile Ala Ile Ala Ile Ser Leu Leu Met Ile Leu Ile				
	165		170	175
Cys Ala Met Ala Thr Tyr Gly Ala Tyr Lys Gln Arg Ala Ala Trp Ile				
	180		185	190
Ile Pro Phe Phe Cys Tyr Gln Ile Phe Asp Phe Ala Leu Asn Met Leu				
	195		200	205
Val Ala Ile Thr Val Leu Ile Tyr Pro Asn Ser Ile Gln Glu Tyr Ile				
	210		215	220
Arg Gln Leu Pro Pro Asn Phe Pro Tyr Arg Asp Asp Val Met Ser Val				
225		230		235 240
Asn Pro Thr Cys Leu Val Leu Ile Ile Leu Leu Phe Ile Ser Ile Ile				
	245		250	255
Leu Thr Phe Lys Gly Tyr Leu Ile Ser Cys Val Trp Asn Cys Tyr Arg				
	260		265	270
Tyr Ile Asn Gly Arg Asn Ser Ser Asp Val Leu Val Tyr Val Thr Ser				
	275		280	285

Asn Asp Thr Thr Val Leu Leu Pro Pro Tyr Asp Asp Ala Thr Val Asn
290 295 300

Gly Ala Ala Lys Glu Pro Pro Pro Pro Tyr Val Ser Ala
305 310 315

<210> 5
<211> 226
<212> PRT
<213> Homo sapiens

<400> 5

Met Lys Met Val Ala Pro Trp Thr Arg Phe Tyr Ser Asn Ser Cys Cys
1 5 10 15

Leu Cys Cys His Val Arg Thr Gly Thr Ile Leu Leu Gly Val Trp Tyr
20 25 30

Leu Ile Ile Asn Ala Val Val Leu Leu Ile Leu Leu Ser Ala Leu Ala
35 40 45

Asp Pro Asp Gln Tyr Asn Phe Ser Ser Ser Glu Leu Gly Gly Asp Phe
50 55 60

Glu Phe Met Asp Asp Ala Asn Met Cys Ile Ala Ile Ala Ile Ser Leu
65 70 75 80

Leu Met Ile Leu Ile Cys Ala Met Ala Thr Tyr Gly Ala Tyr Lys Gln
85 90 95

Arg Ala Ala Trp Ile Ile Pro Phe Phe Cys Tyr Gln Ile Phe Asp Phe
100 105 110

Ala Leu Asn Met Leu Val Ala Ile Thr Val Leu Ile Tyr Pro Asn Ser
115 120 125

Ile Gln Glu Tyr Ile Arg Gln Leu Pro Pro Asn Phe Pro Tyr Arg Asp
130 135 140

Asp Val Met Ser Val Asn Pro Thr Cys Leu Val Leu Ile Ile Leu Leu
145 150 155 160

Phe Ile Ser Ile Ile Leu Thr Phe Lys Gly Tyr Leu Ile Ser Cys Val
165 170 175

Trp Asn Cys Tyr Arg Tyr Ile Asn Gly Arg Asn Ser Ser Asp Val Leu
180 185 190

Val Tyr Val Thr Ser Asn Asp Thr Thr Val Leu Leu Pro Pro Tyr Asp
195 200 205

Asp Ala Thr Val Asn Gly Ala Ala Lys Glu Pro Pro Pro Pro Tyr Val
210 215 220

Ser Ala
225

<210> 6
<211> 2264
<212> DNA
<213> Homo sapiens

<400> 6
gaatctcgac ccttgaatgg agttacacga acggccagat gaaagaagga aggcccgagc 60
ctccactcag ggccgactag gggactggcg gaggggtgcac gctgatggat ttactcaccg 120
ggcgcttgga gctccagcag ctgcttggag ctccagcagc tggctggagc ccgcgatgac 180
gtcacggact cgggtcacat ggccgagtcg gccccgcccc ctccccgtcc ccgcgctgc 240
agccgtcgcc ttcggagcga aggggtaccga cccggcagaa gctcggagct ctcggggtat 300
cgaggaggca ggcccgcggg cgcacgggag agcgggcgag gagccggagc ggccggaggag 360
ccggcagcag cggcgcgggc ggctccaggg gagggcggtc acgctcctga aaacttgccg 420
gcgcgctcgc gccactgcgc ccggagcgat gaagatggtc gcgccttgga cgcggttcta 480
ctccaacagc tgctgcttgt gctgccatgt ccgcaccggc accatcctgc tcggcgctctg 540
gtatctgatc atcaatgctg tgggtactgtt gattttattg agtgccctgg ctgatccgga 600
tcagtataac ttttcaagtt ctgaactggg aggtgacttt gagttcatgg atgatgcaa 660
catgtgcatt gccattgcga tttctcttct catgatcctg atatgtgcta tggctactta 720
cggagcgtag aagcaacgcg cagcctggat catccattc ttctgttacc agatctttga 780
ctttgccctg aacatgttgg ttgcaatcac tgtgcttatt tatccaaact ccattcagga 840
atacatagc caactgcctc ctaattttcc ctacagagat gatgtcatgt cagtgaatcc 900
tacctgtttg gtccttatta ttcttctgtt tattagcatt atcttgactt ttaagggtta 960

```

cttgattagc tgtgttttggg actgctaccg atacatcaat ggtaggaact cctctgatgt 1020
cctggtttat gttaccagca atgacactac ggtgctgcta cccccgtatg atgatgccac 1080
tgtgaatggt gctgccaaag agccaccgcc accttacgtg tctgcctaag ccttcaagtg 1140
ggcggagctg agggcagcag cttgactttg cagacatctg agcaatagtt ctgttatttc 1200
acttttgcca tgagcctctc tgagcttggt tgttgctgaa atgctacttt ttaaaattta 1260
gatgttagat tgaaaactgt agttttcaac atatgctttg ctggaacact gtgatagatt 1320
aactgtagaa ttcttcctgt acgattgggg atataatggg cttcactaac cttccctagg 1380
cattgaaact tccccaaat ctgatggacc tagaagtctg cttttgtacc tgctggggccc 1440
caaagttggg ctttttctc tctgttcct ctcttttgaa aatgtaaaat aaaacaaaaa 1500
atagacaact ttttcttcag ccattccagc atagagaaca aaaccttatg gaaacaggaa 1560
tgtcaattgt gtaatcattg ttctaattag gtaaatagaa gtccttatgt atgtgttaca 1620
agaatttccc ccacaacatc ctttatgact gaagttcaat gacagtttgt gtttggtggt 1680
aaaggatttt ctccatggcc tgaattaaga ccattagaaa gcaccaggcc gtgggagcag 1740
tgaccatctg ctgactgttc ttgtggatct tgtgtccagg gacatggggt gacatgcctc 1800
gtatgtgtta gaggggtggaa tggatgtgtt tggcgctgca tgggatctgg tgcccctctt 1860
ctcctggatt cacatcccca ccaggggccc gcttttacta agtgttctgc cctagattgg 1920
ttcaaggagg tcatccaact gactttatcg agtggaattg ggatatattt gatatacttc 1980
tgcctaacaa catggaaaag ggttttcttt tccctgcaag ctacatccta ctgctttgaa 2040
cttccaagta tgtctagtca ctttttaaaa tgtaaacatt ttcagaaaaa tgaggattgc 2100
cttccttgta tgcgcttttt accttgacta cctgaattgc aagggatttt tatatattca 2160
tatgttacia agtcagcaac tctcctgttg gttcattatt gaatgtgctg taaattaagt 2220
tgtttgcaat taaaacaagg ttgcccaca aaaaaaaaaa aaaa 2264

```

```

<210> 7
<211> 370
<212> PRT
<213> Homo sapiens

```

```

<400> 7

```

```

Met Glu Leu His Glu Arg Pro Asp Glu Arg Arg Lys Ala Arg Thr Ser
1          5          10          15

```


Thr Gln Gly Arg Leu Gly Asp Trp Arg Arg Val His Ala Asp Gly Phe
20 25 30

Thr His Arg Val Leu Gly Ala Pro Ala Ala Ala Trp Ser Ser Ser Ser
35 40 45

Trp Leu Glu Pro Ala Met Thr Ser Arg Thr Arg Val Thr Trp Pro Ser
50 55 60

Pro Pro Arg Pro Leu Pro Val Pro Ala Ala Ala Val Ala Phe Gly
65 70 75 80

Ala Lys Gly Thr Asp Pro Ala Glu Ala Arg Ser Ser Arg Gly Ile Glu
85 90 95

Glu Ala Gly Pro Arg Ala His Gly Arg Ala Gly Arg Glu Pro Glu Arg
100 105 110

Arg Arg Ser Arg Gln Gln Arg Arg Gly Gly Leu Gln Ala Arg Arg Ser
115 120 125

Thr Leu Leu Lys Thr Cys Ala Arg Ala Arg Ala Thr Ala Pro Gly Ala
130 135 140

Met Lys Met Val Ala Pro Trp Thr Arg Phe Tyr Ser Asn Ser Cys Cys
145 150 155 160

Leu Cys Cys His Val Arg Thr Gly Thr Ile Leu Leu Gly Val Trp Tyr
165 170 175

Leu Ile Ile Asn Ala Val Val Leu Leu Ile Leu Leu Ser Ala Leu Ala
180 185 190

Asp Pro Asp Gln Tyr Asn Phe Ser Ser Ser Glu Leu Gly Gly Asp Phe
195 200 205

Glu Phe Met Asp Asp Ala Asn Met Cys Ile Ala Ile Ala Ile Ser Leu
210 215 220

Leu Met Ile Leu Ile Cys Ala Met Ala Thr Tyr Gly Ala Tyr Lys Gln
225 230 235 240

Arg Ala Ala Trp Ile Ile Pro Phe Phe Cys Tyr Gln Ile Phe Asp Phe

245	250	255
Ala Leu Asn Met Leu Val Ala Ile Thr Val Leu Ile Tyr Pro Asn Ser		
260	265	270
Ile Gln Glu Tyr Ile Arg Gln Leu Pro Pro Asn Phe Pro Tyr Arg Asp		
275	280	285
Asp Val Met Ser Val Asn Pro Thr Cys Leu Val Leu Ile Ile Leu Leu		
290	295	300
Phe Ile Ser Ile Ile Leu Thr Phe Lys Gly Tyr Leu Ile Ser Cys Val		
305	310	315 320
Trp Asn Cys Tyr Arg Tyr Ile Asn Gly Arg Asn Ser Ser Asp Val Leu		
325	330	335
Val Tyr Val Thr Ser Asn Asp Thr Thr Val Leu Leu Pro Pro Tyr Asp		
340	345	350
Asp Ala Thr Val Asn Gly Ala Ala Lys Glu Pro Pro Pro Pro Tyr Val		
355	360	365
Ser Ala		
370		

<210> 8
 <211> 1341
 <212> DNA
 <213> Homo sapiens

<400> 8
 gctccagggtg gaagagtgtg cagctgcaag atttaataga gtgaaaacag ctcccataca 60
 gtgggcgggg acccaaaggg ggttgccac tcccggtggtg aatgcctggg gtttatatcc 120
 caatcattgt ccctccccct gtgctctcag atgatagatg atttgactat ttctttacct 180
 cttgctttta gcttaattgg tgttttagtg agcccttttt actacctgat tggtcagggtg 240
 tgagctgagt tacaagcccc atgtttaagg gtgggtgctg tccccttccc caggtagggtt 300
 taggaattct tagtcgcccc aggaaatccg ctactcttgt ctctcactgg gattacaggc 360
 gtgagccacc gcgcccagcc aatttttggt tttttttag agccagggtt tcgcatgtt 420
 gccaggtg ggactgaatc tttagagctg cactcatgat taaaaacgct gtgccaggcg 480

ttgtggctca cgcctgtaat cccagcactt tgggaggctg aggcgggcg atcacgaggt	540
cagaagatcg agaccatcct ggctaacacg gtgaaacccc gtctctactg aaaatacaac	600
aaattagcca ggcgtggtgg cgggcgcctg tagtcccagc tactagggag gctgaggcag	660
gagaatggcg tgaacccggg aggtggagct tgcagtgagc cgagatcgca cactgcact	720
ccagcctggg tgacagagca agactctgtc tcaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	780
agctaccgga agcacagcga ggatgtcctt gacacacatc ctattttctg ggaaaagatt	840
actaccacag taattgagct gtgaagcgga gacaaattgc tctcgggtggg ggttcaaagt	900
actgcaattg actggaatag caccgcgcag ttttccttcc tctcgtgcaa gataagagtg	960
ataggagctg tatcgattac ctgcaagata gaagtagaag cgggccgggt gcggtggctc	1020
acgcctgtaa tcccagcact ttgggaggct gaggcgggtg gatcattcga cgtcaggagt	1080
tccagaccag cctgaccaac atgggtgaaac cccgtctcta ctaaaaatac aacaaattag	1140
ccgggtgtgg tggcaagcgc ctgtaatccc agctactcgg ttgggtgggc aggagaatcg	1200
cttgaacccg ggaggcggag gttgcagtga gccgagatcg cgccattgca ctccagcctg	1260
ggcgacaaga gcgagactct gtctcaaaaa aaaaaaaaaa agaagtagaa gggaagaaaa	1320
tcgcaaggaa ctgactaaa a	1341

<210> 9
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer for LAPTM4B allele genotyping

<400> 9	
gccgactagg ggactggcgg a	21

<210> 10
 <211> 21
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Primer for LAPTM4B allele genotyping

<400> 10	
cgagagctcc gagcttctgc c	21

<210> 11
 <211> 30

<212> DNA
<213> Artificial sequence

<220>
<223> Primer for promoter transcriptional activity analysis

<400> 11
gcgctcgagg ctccaggtgg aagagtgtgc 30

<210> 12
<211> 30
<212> DNA
<213> Artificial sequence

<220>
<223> Primer for promoter transcriptional activity analysis

<400> 12
gcgctcgagt aaaaacgctg tgccaggcgt 30

<210> 13
<211> 30
<212> DNA
<213> Artificial sequence

<220>
<223> Primer for promoter transcriptional activity analysis

<400> 13
ccgctcgagt accggaagca cagcgaggat 30

<210> 14
<211> 30
<212> DNA
<213> Artificial sequence

<220>
<223> Primer for promoter transcriptional activity analysis

<400> 14
gcgctcgaga gtagaaggga agaaaatcgc 30

<210> 15
<211> 29
<212> DNA
<213> Artificial sequence

<220>
<223> Primer for promoter transcriptional activity analysis

<400> 15
gcgaagcttg gacttgcca tgtgaccgc 29



SEQUENCE LISTINGS

<160>8

<210>1

<211>954

<212>DNA

<213> *Homo sapiens*

<400>1

atgacgtcac ggactcgggt cacatggccg agtccgcccc gccccctccc cgtccccgcc 60
gctgcagccg tcgccttcgg agcgaagggt accgaccggg cagaagctcg gagctctcgg 120
ggatcagagg aggcaggccc gcgggcgcac gggcgagcgg gccgggagcc ggagcggcgg 180
aggagccggc agcagcggcg cggcgggctc caggcgaggc ggtcgacgct cctgaaaact 240
tgcgcgcgcg ctgcgccac tgcgccgga gcgatgaaga tggtcgcgcc ctggacgcgg 300
ttctactcca acagctgctg cttgtgctgc catgtccgca ccggcaccat cctgctcggc 360
gtctggtatc tgatcatcaa tgctgtgga ctgttgattt tattgagtgc cctggctgat 420
ccggatcagt ataacttttc aagtctgaa ctgggagggt actttgagtt catggatgat 480
gccaacatgt gcattgccat tgcgatttct ctctcatga tctgatatg tgctatggct 540
acttacggag cgtacaagca acgcgcagcc tggatcatcc cattctctg ttaccagatc 600
tttgactttg cctgaacat gtgtgttgca atcactgtgc ttatttatcc aaactccatt 660
caggaataca tacggcaact gcctcctaatt ttccctaca gagatgatgt catgtcagt 720
aatcctacct gtttggctct tattattctt ctgtttatta gcattatctt gacttttaag 780
ggttacttga ttagctgtgt ttggaactgc taccgataca tcaatggtag gaactcctct 840
gatgtcctgg ttatgttac cagcaatgac actacggtgc tgctaccccc gtatgatgat 900
gccactgtga atggtgctgc caaggagcca ccgccacctt acgtgtctgc ctaa 954

<210>2

<211>1440

<212>DNA

<213> *Homo sapiens*

<400>2

gccgactagg ggactggcgg aggggtgcacg ctgatggatt tactcaccgg gtgcttgagg 60
ctccagcagc tggctggagc ccgcgatgac gtcacggact cgggtcacat ggccgagtcc 120

gccccgcccc ctccccgtcc ccgcccgtgc agccgtcgcc ttcggagcga aggggtaccga 180
 cccggcagaa gctcggagct ctccgggtat cgaggaggca ggcccgcggg cgcacgggcg 240
 agcgggcccgg gagccggagc ggcggaggag ccggcagcag cggcgcggcg ggctccaggc 300
 gaggcggctg acgctcctga aaacttgcgc gcgcgctcgc gccactgcgc ccggagcgat 360
 gaagatggtc gcgccctgga cgcggttcta ctccaacagc tgctgcttgt gctgcatgt 420
 ccgaccggc accatcctgc tcggcgtctg gtatctgac atcaatgctg tggactgtt 480
 gattttatt agtgccctgg ctgatccgga tcagtataac tttcaagtt ctgaactggg 540
 aggtgacttt gagttcatgg atgatccaa catgtgcatt gccattgcga ttctcttct 600
 catgatcctg atatgtgcta tggctactta cggagcgtac aagcaacgcg cagcctggat 660
 catccattc ttctgttacc agatcttga cttgccctg aacatgttg ttgcaatcac 720
 tgtgcttatt tatccaaact ccattcagga atacatacgg caactgcctc ctaattttcc 780
 ctacagagat gatgtcatgt cagtgaatcc tacctgttg gtccttatta ttctctgtt 840
 tattagcatt atcttgactt ttaagggta ctgattagc tgtgttgga actgctaccg 900
 atacatcaat ggtaggaact cctctgatgt cctggtttat gttaccagca atgacactac 960
 ggtgctgcta cccccgatg atgatccac tgtgaatgg gtcgccaagg agccaccgcc 1020
 accttacgtg tctgcctaag ccttcaagt ggcggagctg agggcagcag ctgactttg 1080
 cagacatctg agcaatagtt ctgttattc acttttgcca tgagcctctc tgagcttgtt 1140
 tgtgtctgaa atgctacttt ttaaaattta gatgttagat tgaaaactgt agttttcaac 1200
 atatgcttg ctggaacact gtgatagatt aactgtagaa ttctctctgt acgattgggg 1260
 atataatggg cttcactaac ctccctagg cattgaaact tccccaaat ctgatggacc 1320
 tagaagtctg cttttgtacc tgctgggccc caaagttggg cattttctc tctgttccct 1380
 ctctttgaa aatgtaaaat aaaacaaaa atagacaaa aaaaaaaaa aaaaaaaaaa 1440

<210>3

<211>2169

<212>DNA

<213> *Homo sapiens*

<400>3

gccgactagg ggactggcgg aggggtgcacg ctgatggatt tactcaccgg gtgcttgag 60
 ctccagcagc tggctggagc ccgcatgac gtcacggact cgggtcacat ggccgagtcc 120
 gccccgcccc ctccccgtcc ccgcccgtgc agccgtcgcc ttcggagcga aggggtaccga 180
 cccggcagaa gctcggagct ctccgggtat cgaggaggca ggcccgcggg cgcacgggcg 240
 agcgggcccgg gagccggagc ggcggaggag ccggcagcag cggcgcggcg ggctccaggc 300
 gaggcggctg acgctcctga aaacttgcgc gcgcgctcgc gccactgcgc ccggagcgat 360
 gaagatggtc gcgccctgga cgcggttcta ctccaacagc tgctgcttgt gctgcatgt 420

ccgcaccggc accatcctgc tcggcgtctg gtatctgac atcaatgctg tggactggt 480
 gattttattg agtgccttg ctgatccgga tcagtataac tttcaagtt ctgaactggg 540
 aggtgacttt gagttcatgg atgatgcaa catgtgcatt gccattgcga ttctcttct 600
 catgatcctg atatgtgcta tggctactta cggagcgtac aagcaacgcg cagcctggat 660
 catcccatc ttctgttacc agatcttga cttgccctg aacatgttgg ttgcaatcac 720
 tgtgcttatt tatccaaact ccattcagga atacatacgg caactgcctc ctaatttcc 780
 ctacagagat gatgtcatgt cagtgaatcc tacctgttg gtccttatta ttctctgtt 840
 tattagcatt atcttgactt ttaagggta ctgattagc tgtgttggga actgctaccg 900
 atacatcaat ggtaggaact cctctgatgt cctggttat gttaccagca atgacactac 960
 ggtgctgcta ccccgatg atgatccac tgtgaatggt gctgccaagg agccaccgcc 1020
 accttacgtg tctgcctaag cctcaagtg ggccgagctg agggcagcag ctgactttg 1080
 cagacatctg agcaatagtt ctgttattc acttttgcca tgagcctctc tgagcttgtt 1140
 tgttgctgaa atgctactt ttaaaattta gatgttagat tgaaaactgt agtttcaac 1200
 atatgcttg ctggaacact gtgatagatt aactgtagaa ttctctgt acgattggg 1260
 atataatggg cttcactaac ctccctagg cattgaaact tccccaaat ctgatggacc 1320
 tagaagtctg ctttgtacc tgctgggccc caaagtggg cattttctc tctgttccct 1380
 ctctttgaa aatgtaaaat aaaacaaaa atagacaact tttcttcag ccattccagc 1440
 atagagaaca aaacctatg gaaacaggaa tgcattgt gtaatcattg ttctaattag 1500
 gtaaatagaa gtccttatgt atgtgtaca agaattccc ccacaacatc ctttatgact 1560
 gaagtcaat gacagttgt gtttggtgt aaaggattt ctccatggcc tgaattaaga 1620
 ccattagaaa gcaccaggcc gtgggagcag tgaccatctg ctgactgtc ttgtggatct 1680
 tgtgtccagg gacatgggt gacatgcctc gtatgtgta gaggggtgaa tggatgtgt 1740
 tggcgtgca tgggatctg tgcccctct ctctggatt cacatccca cccagggcc 1800
 gctttacta agtgttctg cctagattg tcaaggagg tcatccaact gactttatc 1860
 agtggaattg ggatatatt gatatactc tcctaaca catggaaaag ggtttctt 1920
 tccctgcaag ctacatccta ctgcttgaa ctccaagta tgttagtca cttttaaaa 1980
 tgtaaacatt tcagaaaaa tgaggattg cttccttga tgcgctttt acctgacta 2040
 cctgaattg aagggtttt tatatatca tatgttaca agtcagcaac tctctgtt 2100
 gttcattatt gaatgtgctg taaattaagt tgttgcaat taaaacaagg ttgcccaca 2160
 aaaaaaaaa 2169

<210>4

<211>317

<212>PRT

<213> *Homo sapiens*

<400>4

Met Thr Ser Arg Thr Arg Val Thr Trp Pro Ser Pro Pro Arg Pro

1 5 10 15

Leu Pro Val Pro Ala Ala Ala Val Ala Phe Gly Ala Lys Gly

20 25 30

Thr Asp Pro Ala Glu Ala Arg Ser Ser Arg Gly Ile Glu Glu Ala

35 40 45

Gly Pro Arg Ala His Gly Arg Ala Gly Arg Glu Pro Glu Arg Arg

50 55 60

Arg Ser Arg Gln Gln Arg Arg Gly Gly Leu Gln Ala Arg Arg Ser

65 70 75

Thr Leu Leu Lys Thr Cys Ala Arg Ala Arg Ala Thr Ala Pro Gly

80 85 90

Ala Met Lys Met Val Ala Pro Trp Thr Arg Phe Tyr Ser Asn Ser

95 100 105

Cys Cys Leu Cys Cys His Val Arg Thr Gly Thr Ile Leu Leu Gly

110 115 120

Val Trp Tyr Leu Ile Ile Asn Ala Val Val Leu Leu Ile Leu Leu

125 130 135

Ser Ala Leu Ala Asp Pro Asp Gln Tyr Asn Phe Ser Ser Ser Glu

140 145 150

Leu Gly Gly Asp Phe Glu Phe Met Asp Asp Ala Asn Met Cys Ile

155 160 165

Ala Ile Ala Ile Ser Leu Leu Met Ile Leu Ile Cys Ala Met Ala

170 175 180

Thr Tyr Gly Ala Tyr Lys Gln Arg Ala Ala Trp Ile Ile Pro Phe

185 190 195

Phe Cys Tyr Gln Ile Phe Asp Phe Ala Leu Asn Met Leu Val Ala

200 205 210

Ile Thr Val Leu Ile Tyr Pro Asn Ser Ile Gln Glu Tyr Ile Arg

215 220 225

Gln Leu Pro Pro Asn Phe Pro Tyr Arg Asp Asp Val Met Ser Val

230 235 240

Asn Pro Thr Cys Leu Val Leu Ile Ile Leu Leu Phe Ile Ser Ile

245 250 255

Ile Leu Thr Phe Lys Gly Tyr Leu Ile Ser Cys Val Trp Asn Cys

260 265 270
 Tyr Arg Tyr Ile Asn Gly Arg Asn Ser Ser Asp Val Leu Val Tyr
 275 280 285
 Val Thr Ser Asn Asp Thr Thr Val Leu Leu Pro Pro Tyr Asp Asp
 290 295 300
 Ala Thr Val Asn Gly Ala Ala Lys Glu Pro Pro Pro Pro Tyr Val
 305 310 315
 Ser Ala

317
 <210>5
 <211>226
 <212>PRT
 <213> *Homo sapiens*

<400>5
 Met Lys Met Val Ala Pro Trp Thr Arg Phe Tyr Ser Asn Ser Cys
 1 5 10 15
 Cys Leu Cys Cys His Val Arg Thr Gly Thr Ile Leu Leu Gly Val
 20 25 30
 Trp Tyr Leu Ile Ile Asn Ala Val Val Leu Leu Ile Leu Leu Ser
 35 40 45
 Ala Leu Ala Asp Pro Asp Gln Tyr Asn Phe Ser Ser Ser Glu Leu
 50 55 60
 Gly Gly Asp Phe Glu Phe Met Asp Asp Ala Asn Met Cys Ile Ala
 65 70 75
 Ile Ala Ile Ser Leu Leu Met Ile Leu Ile Cys Ala Met Ala Thr
 80 85 90
 Tyr Gly Ala Tyr Lys Gln Arg Ala Ala Trp Ile Ile Pro Phe Phe
 95 100 105
 Cys Tyr Gln Ile Phe Asp Phe Ala Leu Asn Met Leu Val Ala Ile
 110 115 120
 Thr Val Leu Ile Tyr Pro Asn Ser Ile Gln Glu Tyr Ile Arg Gln
 125 130 135
 Leu Pro Pro Asn Phe Pro Tyr Arg Asp Asp Val Met Ser Val Asn
 140 145 150

Pro Thr Cys Leu Val Leu Ile Ile Leu Leu Phe Ile Ser Ile Ile			
	155	160	165
Leu Thr Phe Lys Gly Tyr Leu Ile Ser Cys Val Trp Asn Cys Tyr			
	170	175	180
Arg Tyr Ile Asn Gly Arg Asn Ser Ser Asp Val Leu Val Tyr Val			
	185	190	195
Thr Ser Asn Asp Thr Thr Val Leu Leu Pro Pro Tyr Asp Asp Ala			
	200	205	210
Thr Val Asn Gly Ala Ala Lys Glu Pro Pro Pro Pro Tyr Val Ser			
	215	220	225

Ala

226